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RESEARCH NOTE

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A retrospective cross-sectional survey on nosocomial bacterial infections and their antimicrobial susceptibility patterns in hospitalized patients in northwest of Iran

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Abstract

Objective: Nosocomial infections (NIs) are known as one of the remarkable problems in all countries. This study is aimed to estimate the prevalence rate of nosocomial bacterial agents with antimicrobial susceptibility pattern in hospitalized patients. This study was conducted from April 2017 to September 2018, on 4029 hospitalized patients. We set out to recognize the commonest bacterial infections and antimicrobial susceptibility patterns of nosocomial infection.

Results: Of the 4029 patients, 509 (12.6%) of them were culture positive. Of these *Escherichia coli* (*E. coli*) (98.3%) and *Staphylococcus epidermidis* (*S. epidermidis*) (37.5%) were the most abundant bacterial identified in the urinary tract and bloodstream cultures respectively, Moreover, *Acinetobacter spp.* (100%) and *Pseudomonas aeruginosa* (22.2%) were the most abundant organisms detected in the respiratory system. According to susceptibility testing results, 370 (80.5%) and 264 (57.3%) in Gram-negatives and 44 (91.7%) and 35 (72.9%) in gram positives isolated strains were classified as multidrug-resistant (MDR) and extensive drug-resistant (XDR) strain respectively. On account of the high prevalence of MDR and XDR bacterial species, there is a pressing need for the expansion of new strategies on antibiotic supervision and infection control to introduce new guideline on empirical antibiotic therapy.

Keywords: Nosocomial infections, Bacterial isolates, Susceptibility patterns, Multi-drug resistant (MDR), Extensively-drug resistant (XDR)

Introduction

Nosocomial infections (NIs) are known as hospital-gained infection expanding within 48–72 h after incoming [1]. A large part of morbidity and mortality in hospitals goes back to the NIs [2]. Following the increasing rate of NIs, developing in socio-economic disturbance, antimicrobial resistance, and the mortality rate are inevitable [3]. NIs happen throughout the world both in developing and developed countries. NIs accounts for 10% in developing and 7% in developed countries [4]. Nearly 2 million people have been tangled in this matter and also would be known as a major reason for the loss of life and money [5]. Bacteria are hugely the prominent cause of NIs [6]. The most usual kinds of NIs which happen in a hospital set up are: urinary system, bloodstream infections, surgical site infections, gastroenteritis, respiratory system [7, 8]. Despite global endeavor to rein NIs during previous years, NIs still stays a widespread problem and as one of the important causes of antibiotic resistance in hospitalized patients [9]. As antibiotic resistance continues to greaten, attuned definitions with which

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Medical Sciences. In the current study, all ethical guidelines including Ethics and Consent to participate from the parents have been collected.

Consent to publication
Not applicable.

Competing interests
The authors announce that they have no difference in interest.

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